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Antenatal counselling for congenital anomaly tests: An exploratory video-observational study about client–midwife communication

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ABSTRACT

Objective: antenatal counselling for congenital anomaly tests is conceptualised as having both Health Education (HE) and Decision-Making Support (DMS) functions. Building and maintaining a client–midwife relation (CMR) is seen as a necessary condition for enabling these two counselling functions. However, little is known about how these functions are fulfilled in daily practice. This study aims to describe the relative expression of the antenatal counselling functions; to describe the ratio of client versus midwife conversational contribution and to get insight into clients' characteristics, which are associated with midwives' expressions of the functions of antenatal counselling.
Design: exploratory video-observational study.
Participants and setting: 269 videotaped antenatal counselling sessions for congenital anomaly tests provided by 20 midwives within six Dutch practices.
Measurements: we used an adapted version of the Roter Interaction Analysis System to code the client–midwife communication. Multilevel linear regression analyses were used to analyse associations between clients' characteristics and midwifes' expressions of antenatal counselling in practice.
Findings: most utterances made during counselling were coded as HE (41%); a quarter as DMS (23%) and 36% as CMR. Midwives contributed the most to the HE compared to clients or their partners (91% versus 9%) and less to the DMS function of counselling (61% versus 39%). Multilevel analyses showed an independent association between parity and shorter duration of antenatal counselling; ($\beta = -3.01$; $p < 0.001$). The amount of utterances concerning HE and DMS during counselling of multipara was less compared to nulliparous.
Key conclusions: antenatal counselling for congenital anomaly tests by midwives is focused on giving HE compared to DMS. The relatively low contribution of clients during DMS might indicate poor DMS given by midwives. Counselling of multipara was significantly shorter than counselling of nulliparous; multiparae received less HE as well as DMS compared to nulliparous women.
Implications for practice: our findings should encourage midwives to reflect on the process of antenatal counselling they offer with regards to the way they address the three antenatal counselling functions during counselling of nulliparous women compared to multiparae.

Introduction

Antenatal screening for Down syndrome, other chromosomal and structural congenital anomalies has become common obstetrical practice in many countries (Nicolaides et al., 2002; Leporrier et al., 2003). Antenatal screening aims to provide timely information to women and their partners about the health of their fetus in

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order to enhance their reproductive choice (Economides, 1999). If the fetus is diagnosed with a chromosomal disorder or structural congenital anomaly, prospective parents have the opportunity to either prepare for the birth of a child with a congenital anomaly, or to opt for termination of the pregnancy (Health Council, 2007; Fransen et al., 2009). Screening tests and these options are typically discussed during antenatal counselling. In the Netherlands, since 2007, midwives have provided routine antenatal counselling for congenital anomaly tests to nearly 80% of pregnant population (Wiegers, 2009). The purpose of this counselling has been to facilitate autonomous, informed decision-making by prospective parents regarding the uptake of antenatal congenital anomaly tests using an opting in approach (Health Council, 2007; van Agt et al., 2007; Oepkes and Wieringa, 2008; Waelput and Hoekstra, 2012).

High quality counselling consists of health education, decision-making support and relationship-building (Roter et al., 2006; Meiser et al., 2008; Martin et al., 2013a). The latter function is seen as a necessary condition for enabling the first two counselling functions and could be accomplished by showing empathy and understanding and using partnership statements and social conversation (Weil et al., 2006; Smets et al., 2007; Martin et al., 2013a; www.riasworks.com). *Health education* topics include providing information about the antenatal tests that are available and the anomalies that can and cannot be detected (van Agt et al., 2007; KNOV, 2010; Martin et al., 2013a, 2013b). Key elements of decision-making support include empowering clients to find personal meaning in the information given and making psychological sense of the implications for the future. This support is intended to minimise psychological distress and increase personal feelings of control as well as to facilitate autonomous decision-making (Roter et al., 2006; McCarthy Veach et al., 2007; Smets et al., 2007; Meiser et al., 2008; van Zwieten, 2009; van Zwieten, 2010).

The extent to which this three-function antenatal counselling model is reflected in daily practice is, so far, unknown. However, because of the extensive amount of information counsellors are obliged to give it has been established by Dutch educational and research programs that the *health education* function requires a lot of time and attention to a variety of information (van Agt et al., 2007; KNOV, 2010; Schoonen et al., 2012a, 2012b, 2011a, 2011b). Furthermore, the role of *health educator* is more familiar to most counsellors in the medical setting compared to the role of providing *decision-making support* and therefore more counselling activity seems to focus on providing *health education* (Roter et al., 2006). Moreover, clients' characteristics seem to influence counselling in practice. Counselling with better educated clients seems to contain both more *health education* and *decision-making support*, as better educated clients ask probably more questions. The presence of a partner seems also related to both more *health education* and *decision-making support*, as it will take more effort to inform two persons and to engage them both into the discussion about the decisions at hand (Roter et al., 2006; Ahmed et al., 2012; Elwyn et al., 2012; Barr and Skirton, 2013; Martin et al., 2013a).

The current study was designed to provide a detailed description of routine antenatal counselling for congenital anomaly tests by midwives in the Netherlands, during videotaped, every day practice (see Appendix A for more information about the Dutch antenatal screening context). This study aims to (1) describe the relative expression of the three functions of the antenatal counselling model (*HE*, *DMS* and *CMR*) during counselling by midwives; (2) describe the ratio client versus midwife conversational contribution within the three antenatal counselling functions; (3) explore characteristics which are associated with midwives' expressions of the three function antenatal counselling model.

It was expected that the *health education* function would be expressed most by midwives compared to *decision-making support* and that midwives would contribute more to the conversation during counselling compared to clients. With regards to clients' characteristics it was expected that parity was negatively associated with the amount of *health education* given during counselling, because midwives might expect multipara to have former knowledge. Furthermore, it was expected that consultations with better educated clients and/or with partners present would contain both more *health education* and *decision-making support*.

Methods

We used a video observational design to study antenatal counselling. The present study is part of DELIVER, a multicentre national research programme investigating the quality and provision of primary midwifery care in the Netherlands (Mannien et al., 2012).

Our study was approved by the Institutional Review Board and the Medical Ethical Committee of the VU University Medical Centre, Amsterdam, the Netherlands, supplemented by local agreements to participate from all participating midwifery practices.

Participating midwives

From the 20 primary care midwifery practices participating in the DELIVER study (Mannien et al., 2012), six practices were purposively sampled based on their practice size and location in the Netherlands (urban versus semi-rural and percentages of clients from non-Dutch origin), and participated between August 2010 and April 2011. Every participating midwife was asked to video-tape 10–20twenty consultations in order to assure the reliability of the test sample (Fletcher and Fletcher, 2005) and to complete a pre- and post-counselling questionnaire. As an incentive for participation, each participating midwife was offered a one time amount 80 euro credit note after they finished the video-recordings for this study.

Participating clients

Clients were recruited from all consecutive new clients (pregnant women and their partners) of the six midwifery practices. We used a video observational design to study antenatal counselling between June 2010 and May 2011. Clients (nulliparous or multipara) were eligible if they were: (1) new to antenatal counselling for the current pregnancy; (2) aged 18 years or older; (3) able to read Dutch or English.

Procedure

Clients were invited to participate in the study by the practice assistant and if they agreed received additional, written information about the study. Participating clients and partners were asked to sign an informed consent form as well as to complete a pre-visit questionnaire.

Measurements

Midwifery and client questionnaires

Midwives' characteristics such as age, gender and religion were derived from a questionnaire completed as part of our study regarding midwives' views on appropriate antenatal counselling (Martin et al., 2013b). Clients' background characteristics such as age, parity and ethnicity, were derived from the pre-visit questionnaire (Martin et al., 2013a).

Measurement to code HE, DMS and CMR on videotapes: RIAS^{prenatal}

The most well-known and frequently used coding scheme for provider–patient communication with good reliability and concurrent validity is the Roter Interaction Analyses System (RIAS) (Roter et al., 2006; Ellington et al., 2011; Roter et al., 2011) (Appendix B). RIAS is also the most exhaustive coding scheme available (Ellington et al., 2011; Roter et al., 2011). During the coding procedure meaningful utterances (e.g. a sentence or a thought) of midwives and clients were counted, e.g. the client asking the midwife which anomalies can be found using antenatal screening; or the midwife informing the client of her risk of having a child suffering from a congenital abnormality. The occurrence of utterances with similar themes are categorised and the frequencies are then counted. Three trained observers used an adjusted version of the RIAS, the RIAS^{prenatal}, to code the video recordings.

Health Education was coded using the content areas 'medical condition' and 'medical testing' concerning topics such as information exchange about the medical conditions which can be detected by antenatal congenital anomaly tests, and 'societal information exchange' concerning topics like costs and eligibility of these tests. All codes within these main categories were computed into the categories *HE Information*, *HE Questions* and *Total HE* (Table 4). *Decision-making support* was coded using the content area 'counselling behaviour' (midwives only category) or 'psychosocial topics' containing topics that address exploration of clients' moral dilemmas concerning the decision about whether to take antenatal congenital anomaly tests. The main coding area *DMS* was also divided into two sub-areas *DMS Information* and *DMS Questions*. Finally, the *client–midwife relation* was coded using the 'affective behaviour' categories of the RIAS; affective behaviour facilitates this relation through the development of affinity and responsiveness to the client's emotions. Examples of this category are giving verbal attention, agree and backchannel (e.g. 'hm, hm' or 'ok') and social behaviour.

Coding categories per main coding area (*HE*, *DMS* and *CMR*) were derived from the original RIAS and expanded with 32 items of the 58 item QUOTE^{prenatal} questionnaire, a client-centred instrument to assess clients preferences regarding antenatal counselling for congenital anomaly tests (Martin et al., 2013a). The 32 items were selected from the possible 58 based on the criterion that they had to be observable as verbal communication during the coding of the video-taped consultations. The 32 items we used of the QUOTE^{prenatal} questionnaire were assigned to the most suitable coding area based on the Principal Component Analysis used in the study of Martin et al. (2013a) (Table 1).

Coding reliability

Inter-rater reliability was calculated on a random sample of 26 (9.3%) of the 269 study video tapes. Intraclass correlation (ICC) was used to measure the inter-rater reliability for midwife, client and partner categories with a mean occurrence greater than 2% of the total, which proved to be adequate (Pieterse et al., 2005a, 2005b; Pieterse et al., 2006). At the start and half way through the coding process levels of agreement were measured; some videos were coded again in order to enhance the coding reliability, which it did. Midwife categories had a substantial mean ICC (ICC single measures) of 0.67 (Range: 0.53–0.70). The average ICC of client categories (ICC single measures) was moderate with 0.53 (Range: 0.45–0.58) and the mean ICC of partner categories (ICC single measures) was good with 0.82 (Range: 0.72–0.91) (Landis and Koch, 1977). Moderate and substantial ICCs such as 0.53 and 0.67 are seen in other video-recording studies using similar approaches (Bensing et al., 1995; Roter and Larson, 2002; Pieterse et al., 2005a, 2005b; Steinwachs et al., 2011; van Weert et al., 2013).

Data analysis

Descriptive statistics were used to describe the socio-demographic characteristics of participating midwives, clients and partners. We compared characteristics of midwifery respondents with characteristics of the National midwifery population to examine the representativeness of our research sample with respect to the available information (i.e. age, gender and place of vocational education). Non-response analyses of clients, who declined to participate in this study, were conducted using independent *t*-tests and χ^2 tests to compare both groups with regards to background characteristics such as age and parity. Furthermore, descriptive statistics and multilevel regression analyses were used to describe the potentially independent association between clients' background characteristics and the duration of counselling.

Relative expression of the three antenatal counselling functions

Descriptive statistics (frequencies, percentages) of the coded utterances were used to describe the relative expression of the three counselling functions by clients, partners and midwives together. Throughout the analysis utterances are defined as the smallest unit of expression or statement to which a meaningful code can be assigned, generally a complete thought, expressed by each speaker (client, partner, midwife) throughout the counselling session.

Ratio client versus midwife conversational contribution

The ratio of midwives' versus clients' (women and partners separately) contributions to the conversation relative to the total count of utterances were calculated per counselling function using descriptive statistics. For instance *HE*: *midwives' total HE* utterances/*total HE* utterances; *clients' total HE* utterances/*total HE* utterances and *partners' total HE* utterances/*total HE* utterances.

Characteristics associated with midwives' expressions of the three antenatal counselling functions

The data in our dataset came from 20 midwives of six practices. Therefore, we assumed dependency of our observations. To control for this clustering, a multivariate multilevel linear regression analysis was used to examine client characteristics that are possibly, independently associated with differences in the expression of the three functions of antenatal counselling by midwives. During multivariate multilevel linear regression analysis the following procedure was used. First, we ran a 'naïve' analysis (linear regression analysis) of the relationship between each characteristic (clients' age, parity, religion, ethnicity, education and presence of the partner during counselling) and each of the three independent variables (*HE*, *DMS* and *client–midwife relation* utterances of midwives). Second, we used the likelihood ratio test to determine if a random intercept of 'midwife' alone, 'practice' alone or 'midwife and practice' together would provide the best approach for running the third step. Third we used the likelihood ratio test to evaluate the necessity of a random slope for each dependent variable to the model. We built the final association model for each independent variable separately using a backward selection procedure. For these final analyses we used $p \leq 0.05$ to indicate significance, keeping in mind the arbitrary nature of this limit (Twisk, 2006). SPSS 21.0 was used for the analysis.

Table 1
Items of the QUOTE[prenatal] added to the main content areas of the RIAS[prenatal].

	Client–midwife relation
Q17	Give the client (additional) written information
Q18	Tell the client that she can always contact me with any questions she may have (including when the practice is closed)
	Health education
Q31	Explain the usefulness of prenatal screening (what the client can decide to do eventually)
Q32	Tell the client about all the different types of prenatal tests
Q26	Explain which anomalies can be identified using prenatal screening
Q43	Explain which prenatal tests will be done first and which will be done later, if required and/or necessary
Q45	Explain how long the client may take to decide whether or not to have the prenatal tests
Q48	Discuss all clients options with regard to prenatal screening and the implications
Q29	Discuss possible negative implications of prenatal screening for the unborn child
Q36	Ask about clients family´s history of birth defects
Q33	Tell the client how prenatal screening can affect her emotions and mental wellbeing
Q41	Tell the client why she is or is not eligible for certain prenatal tests
Q42	Explain what will happen DURING the prenatal tests
Q27	Explain which anomalies *cannot* be identified using prenatal tests
Q39	Tell the client about HER chances of having a child with a congenital abnormality during this pregnancy
Q40	Talk to the client about how HER risk of having a child with a birth defect will affect her
Q44	Explain who will give the client the results of the prenatal tests and how (verbally, in writing or by telephone)
Q37	Explain how often congenital anomalies occur in pregnant women of clients age
Q46	Explain how long the client may take to decide whether or not to terminate the pregnancy, should the test results show an abnormality
Q34	Tell the client how much prenatal tests cost
Q38	Explain how the chances of a birth defect are calculated for our unborn child
Q28	Provide medical information about the anomalies that are being tested for
Q35	Tell the client about the incidence of birth defects in the Netherlands
	Decision making support
Q22	Responded to what the client already knew about prenatal screening
Q55	Ask how the client thinks she will react to the results of the prenatal tests
Q14	Enquire clients' standards, values and views on prenatal screening and diagnostic
Q49	Talk to the client about how her family and she would react to a child with a birth defect
Q50	Ask the client to explain her decision to take/not to take the prenatal tests
Q3	Tell which websites the client can use to find information about prenatal screening and diagnostic
Q53	Ask whether test results indicating that clients unborn child has a birth defect would cause problems with her conscience
Q30	Tell the client what the Dutch government aims to achieve by providing prenatal tests
Q52	Ask the client what for her constitutes a healthy child
Q9	Advise the client about whether or not to take the prenatal tests
Q54	Ask whether clients family, friends or other people close to her would support her decision to terminate the pregnancy if the child were to have a congenital abnormality
Q51	Asks whether clients family, friends or other people close to her would support her decision about prenatal screening

Findings

Participating midwives and recorded visits

269 video-recordings of 20 midwives working in six practices were included in the analyses. Per practice the number of participating midwives ranged from one to five midwives. Recordings per midwife ranged from seven to 23. The mean age of the participating midwives was 32.8 years of age (range 23–54 years of age), and mean years of work experience was 8.3 years (range: just started to 33 years of work experience) (Table 2).

One of the midwives offered counselling for antenatal congenital anomaly tests during separate counselling sessions, the other 19 midwives offered this counselling during the routine intake. Within the latter group 191 complete intakes were recorded and in 71 cases the video-recordings were switched on and off to only record the counselling parts of the intake. In cases where the video-recordings contained the whole intake, only the antenatal counselling part was or antenatal counselling parts were analysed. The coding book for coders provided information about how to decide the counselling was started and ended.

Table 3 illustrates that the counselling lasted on average 9.13 (SD=4.16) minutes. Only parity was independently and significantly associated with the duration of counselling. Antenatal counselling of multipara lasted statistical significantly less long compared to nulliparous ($\beta=-3.01$; 95% CI: -3.96 to -2.05; $p<0.001$). The amount of utterances during the counselling is

Table 2
Demographic and professional characteristics of midwives.

Characteristics	Midwives $n=20$ (%)	Dutch midwifery population $n=2264$* (%)
≤40 years	16 (80)	1644 (73)
≥41 years	4 (20)	620 (27)
Gender		
Male	–	43 (2)
Female	20 (100)	2569 (98)
Ethnicity†		
Native	14 (70)	No information available
Non-Native – Non-Western Ethnicity	2 (10)	
Non-Native – Western Ethnicity	4 (20)	
Work experience (years)		
≤2 years	4 (20)	No information available
3–11 years	12 (60)	
≥12 years	4 (20)	
Religious background		
Non-religious	11 (55)	No information available
Religious	9 (45)	

* Hingstman and Kenens (2011).
† In the Netherlands, ethnic origin is defined by country of birth of a person's parents. If one of the parents (of both of them) of a person is born outside the Netherlands, this person is non-Native (Dutch National Office of Statistics; Statistics Netherlands).

Table 3
Characteristics of the video-taped consults.

Duration of consultations and antenatal counselling	n	%	*M* in minutes (SD in minutes)
Duration of counselling	269	100.0	9.13 (4.16)
Duration of counselling in integrated consultations	191	71.0	9.29 (4.22)
Duration of counselling in integrated consultations if video recordings were *switched on and off*	71	26.4	8.32 (3.56)
Duration of separated counselling	7	2.6	*
Duration of counselling nulliparous	98	41.2	**11.03 (4.09)**
Duration of counselling multipara	140	58.8	**7.91 (3.99)**
Duration of counselling Dutch participants	184	77.0	9.46 (4.09)
Duration of counselling non-Dutch participants	55	23.0	9.01 (4.82)
Duration of counselling religious participants	127	47.2	9.08 (4.25)
Duration of counselling non-religious participants	112	41.6	9.59 (4.22)
Duration of counselling lower educated women	115	47.9	9.28 (4.27)
Duration of counselling higher educated women	125	52.1	9.40 (4.27)
Duration of counselling if partner was present	197	73.2	9.85 (4.31)
Duration of counselling if partner was absent	72	28.8	7.45 (3.59)

Bold figures indicate independent significantly association between groups ($p < 0.001$).

* Number of cases too small for relevant, further analyses.

positively related to the duration of counselling and counselling of nulliparous lasted significantly longer compared to multipara. Therefore, it was decided to measure the ratio client versus midwife conversational contribution overall and for nulliparous ($n=98$) and multipara ($n=141$) separately.

Participating clients

Of the 460 eligible clients (pregnant women) invited to take part in the study, 324 (70.4%) agreed to participate, but due to recording and other problems a number 55 video-tapes were lost, leaving 269 clients (269/460=58.5%) to be included in the analysis. Of those included, 194 consultations (194/269=72.1%) clients and their partner visited their midwife together. Data on background characteristics were available for 241 clients (241/269=89.6%) and 171 partners (171/194=88.1%). Table 4 shows the background characteristics of clients and partners. The mean age of clients was 29.2 years of age, (range 20–40 years) and the mean age of partners was 31.8 years of age (range 18–47 years).

We analysed the characteristics of the 136 clients who declined participation. The percentage of multiparas in the non-participant group (75.6%) were higher compared to participants (59.9%) (X^2 (1, $n=324$)=8.58, $p=0.003$, $\varphi=0.159$).

Relative expression of the three antenatal counselling functions

Table 5a and b presents the total amount of utterances regarding the three functions of counselling for antenatal congenital anomaly tests made by midwives, clients and partners. 41% (20635/50154) of the utterances were coded as *HE*, 23% (11528/50154) as *DMS* and 36% (17991/50154) as building a *client–midwife relationship*.

Ratio client versus midwife conversational contribution

Table 5a and b shows that the overall conversational contribution of midwives during antenatal counselling exceeded the contribution of clients and partners (60% versus 32% and 8%, respectively) with no difference for the nulliparous compared to multipara ≥5%. More specifically, results show that midwives contributed the most to the conversation during *HE*; they made 91% of the *HE* utterances, 7% were made by clients and 2% by partners. The majority of the utterances made by midwives were characterised as giving *HE Information* (90% out of 91%). Also, most utterances of clients and partners were characterised as giving *HE Information*.

With regards to *decision-making support* Table 5a and b shows that midwives' relative contribution to the conversation was 61%, clients 29% and partners made 10% of the utterances regarding the *decision-making support* function of antenatal counselling. However, these ratios were different for nulliparous compared to

Table 4
Characteristics of pregnant women and (if present) their partners.

Characteristics	Pregnant women *n*=241* (%)	Partner *n*=171* (%)
Gender		
Male	–	168 (99.4)
Female	241 (100.0)	1 (0.6)
Age (years)		
≤25 years	44 (18.5)	21 (12.6)
26–30 years	108 (45.4)	45 (26.9)
31–35 years	73 (30.7)	69 (41.3)
≥36 years	13 (5.5)	32 (19.2)
Highest level of education†		
Up to high school	115 (47.9)	88 (52.1)
Higher vocational education/ university	125 (52.1)	81 (47.9)
Ethnicity‡		
Native	184 (77.0)	135 (80.8)
Non-Native	55 (23.0)	32 (19.2)
Religious background		
None	112 (47.1)	80 (47.9)
Christian	102 (42.9)	78 (46.7)
Muslim	22 (9.2)	7 (4.2)
Other	2 (0.8)	2 (1.2)
Pregnancy duration		
≤11 weeks	204 (92.3)	147 (94.2)
≥12 weeks	17 (7.7)	9 (5.8)
Parity		
Nulliparous	98 (41.2)	92 (55.1)
Multipara	141 (58.8)	75 (44.9)

* Due to missing and inapplicable answers the *n* can vary from variable to variable. Valid percentages are shown.

† Up to high school includes the Dutch MBO.

‡ In the Netherlands, ethnic origin is defined by country of birth of a person's parents. If one of the parents (of both of them) of a person is born outside the Netherlands, this person is non-Native (Dutch National Office of Statistics; Statistics Netherlands, 2012).

Table 5
(a) Counsellors' MF ($n=20$), clients' ($n=269$) and partners' ($n=194$) number and percentages of total counselling utterances across the three functions of antenatal counselling.

	MF		Client		Partner		Total
	n	%	n	%	n	%	n (%)
Health Education (HE)							
Health education questions	241	1	453	2	192	0.9	886 (4)
Health education information	18520	90	936	5	293	1.1	19749 (96)
Total *Health Education* utterances	18761	91	1389	7	485	2	**20635 (100)** 20635/50154=41%
Decision-making support							
Decision-making support *questions*	1151	11	35	0	34	0	
Decision-making support *information*	1878	16	3359	29	1123	10	
Decision-making support *counselling*	3948	34	–	–	–	–	
Total *Decision-making support* utterances	6977	61	3394	29	1157	10	**11528 (100)** 11528/50154=23%
Client–midwife relation							
Affective communication: verbal attention, social behaviour, agree and backchannels, approval, concern, reassurance, disagree	3497	19	11094	62	2689	15	
Giving written information	557	3	2	0	2	0	
Offer the possibility to talk about antenatal tests again	150	1	–	–	–	–	
Total *client–midwife relation* utterances	4204	23	11096	62	2691	15	**17991 (100)** 17991/50154=36%
Total amount of *antenatal counselling* utterances	29942	60	15879	32	4333	8	**50154 (100)**

(b) Counsellors' MF ($n=20$), clients' ($n=269$) and partners' ($n=194$) number and percentages of total counselling utterances across the three functions of antenatal counselling for and nulliparous ($n=98$) and multipara ($n=141$) separately and all clients together ($n=269$).

	MF		Client		Partner		Total	
	n	%	n	%	n	%	n	%
Health Education (HE)								
Nulliparous	8849	92	553	6	236	2	9638	100
Multipara	8129	90	724	8	197	2	9050	100
Nulliparous and multipara together ($n=269$)	18761	91	1389	7	485	2	20635	100
Decision-making support								
Nulliparous	3240	**65**	1252	**25**	494	10	4986	100
Multipara	3037	**56**	1854	**34**	514	10	5405	100
Nulliparous and multipara together	6977	61	3394	29	1157	10	11528	100
Client–midwife relation								
Nulliparous	1637	21	4708	60	1480	19	7825	100
Multipara	2163	25	5493	64	916	11	8572	100
Nulliparous and multipara together	4204	23	11096	62	2691	15	17991	100
Total amount of *antenatal counselling* utterances								
Nulliparous	13726	61	6513	29	2210	10	22449	100
Multipara	13329	58	8071	35	1627	7	23027	100
Nulliparous and multipara together	29942	60	15879	32	4333	8	50154	100

Bold figures show differences $\geq 9\%$ between the relative contribution to the conversation between counselling of nulliparous versus multipara.

multipara. Multipara contributed relatively more to the conversation during *decision-making support* (34%) compared to nulliparous (25%). Overall, of the midwifery utterances coded as *DMS*, the majority (34%) were intended to direct behaviour. For example 'you really have to talk about your decision at home together with your partner' or utterances stating the 'opting in' system used in the Netherlands such as 'it is important to think about the implications of antenatal testing before you take or refuse them'. The least frequent utterances of midwives were *DMS Questions* (11%), such as 'what reasons do you have to take or refuse prenatal tests?' Both clients and partners made the most utterances regarding giving *DMS Information* (29% and 10%, respectively), such as 'The combined test is just a risk assessment. I think the results will only upset me'.

Regarding the *client–midwife relation* most utterances of midwives, clients and partners were coded as agree or backchannel.

Characteristics associated with midwives' expressions of the three antenatal counselling functions

Results of the multivariable multilevel analyses of the whole dataset show that data were clustered within midwives, but not within practices. Regarding the *HE* function of counselling, the multivariable multilevel analyses shows that of the five potential client characteristics that were included in the model (age, religion, level of education, parity and partner being present or not), only parity was independently and significantly associated with the amount of *HE* utterances as well as *DMS* utterances ($\beta = -27{,}41$; CI: −35,20 to −19,63; $p < 0.001$ and $\beta = -10{,}62$; CI: −14.30 to −6.95 respectively); midwives used less *health educational* and *decision-making support* utterances during counselling of multipara compared to counselling of nulliparous. The expression of building a *client–midwife relation* was independently and significantly associated with the religious background of clients and the age of the pregnant women. With non-religious clients midwives used less *client–midwife relation* utterances compared to religious women ($\beta = -2.42$; CI: −4.88–0.04; $p = 0.05$) and a higher age of pregnant women was associated with more midwives' utterances regarding the *client–midwife relation* ($\beta = 0.41$; CI: 0.11–0.70; $p = 0.01$).

Discussion

This study shows that almost half of the utterances made during antenatal counselling for congenital anomaly tests by midwives were coded as related to the *health education* function of antenatal counselling. About a quarter of the utterances was related to the *decision-making support* function. Building a *client–midwife relation* was accomplished by both midwives and clients primarily through active listening techniques such as giving backchannels and agreements.

As expected, midwives contributed the most to the conversation coded as *health education*. Regarding the *decision-making support* function of counselling, the relative contribution of midwives was less extensive compared to their contribution during *health education*, whereas clients and their partners contributed more to the *decision-making support* conversation compared to their relative contribution during *health education*. This 'pattern' was different for nulliparous compared to multipara; during *decision-making support* of multipara midwives' relative contribution to the discussion was less compared to their contribution during *decision-making support* of nulliparous. Such differences were not found within the other two functions of counselling. Counselling of nulliparous women lasted significantly longer than counselling of multiparous women.

Other research on client–counsellor communication, also concluded that counselling sessions are largely didactic in nature with relatively little emphasis on the psychological and emotional aspects of the decision-making process of clients and decision-making support (Pieterse et al., 2005a, 2005b; Roter et al., 2006). Most of the counselling took place during the initial intake, although a separate counselling consultation is recommended by national guidelines and the literature (de Boer and Zeeman, 2008; van Zwieten, 2008; Ahmed et al., 2012; Elwyn et al., 2012; Barr and Skirton, 2013). Perceived time pressure may be a reason why most practices choose to counsel within the initial intake, despite recommendations from the national guidelines. Most clients enter midwifery care between around 8.6 weeks of pregnancy (Martin et al., 2013a). Scheduling two appointments (e.g. one intake and one antenatal counselling session) is challenging as the blood test of the CT has ideally to be done around 10 weeks of the pregnancy. One way to improve this suboptimal situation is to provide clients with more information about choices at hand, prior to the initial consultation. For example by asking clients and partners to complete a decision aid at home and read information. During counselling the counsellor can then check knowledge, focus on pros and cons of the options, discuss the outcome of the decision aid and provide client-centred *decision-making support* (Elwyn et al., 2012). As far as we know, this approach is not commonly used by midwives. Limited time in combination with a client with little or no prior knowledge could have affected the way midwives asked *decision-making support* questions, i.e. more as rhetorical questions.

With regards to the *decision-making support* function of counselling the results of our study are promising. Midwives seem to understand that during this part of the conversation it is important to step back and listen to the clients' way of making sense of the information they just received. However, our study shows also that midwives use relatively fewer exploring questions compared to directing behaviour. This approach could potentially cause less informed decision-making, because clients are not invited to really answer reflective questions during counselling. As a result, they might not consider them at all and therefore base their decision on uninformed instead of informed preferences. Achieving informed preferences is the optimal goal as decisions will be better understood, based on more accurate expectations about the negative and positive consequences and more consistent with personal preferences (Frosch and Kaplan, 1999; Elwyn et al., 2012).

Results of the multilevel analyses showed a strong association between parity and the amount of health education and decision-making support provided. Furthermore, as expected, counselling of nulliparous women lasted significantly longer than counselling of multiparae. One explanation could be that multiparae know already more about the available tests and might have experience in making decisions about the test uptake and therefore need less health education and decision-making support talk and shorter counselling. However, from an earlier study of our research group it is known that significantly fewer multiparae compared to nulliparous women perceive that the HE they received during counselling met their pre-visit preferences and that a majority of multiparae with strong preferences for decision-making support perceived that these preferences were not fully addressed during counselling (Martin et al., 2013a). As we found no random slope for parity and we did find clustering of data within midwives, midwives seem to be the initiator of contributing more to the decision-making support of nulliparous compared to multiparous women. With the current data it remains unclear if this approach together with differences in the duration of counselling is accurate especially within the Dutch context in which the fee midwives receive for counselling of nulliparous and multipara is the same. The funded pre-test counselling time is 30 minutes (Scholman, 2009).

This study indicated that the full funded 30 minutes for counselling was not used, on average. There may be several reasons why midwives do not use the allocated counselling time pre-test counselling during this first antenatal visit. Perhaps midwives plan to spend additional time later in the pregnancy for example additional counselling for the FAS. Alternatively, they may want to reserve some extra funded time for post-test counselling. Furthermore, maybe there is a difference in perception of time needed between midwives and policy makers. Recent studies demonstrate that a substantial part of the Dutch midwives' perceptions regarding the content of health education do not entirely match clients' preferences and that not all midwives fully endorse the counselling function decision-making support, whereas clients prefer tailored health education as well as decision-making support (Martin et al., 2013a, 2013b). Using the funded 30 minutes time could improve counselling that meets clients' individual preferences as well as professional guidelines.

The expression of building a client–midwife relation was statistically, independently and significantly associated with the religious background of clients indicating that midwives used more client–midwife relation utterances during counselling of religious women. It is difficult to provide examples of the differences between counselling of religious versus non-religious women, as the client–midwife relation is built during the whole counselling using utterances such as 'yes, I can imagine it is a difficult decision to make' or 'hm, indeed'. However, an explanation for the expression of more client–midwife relation utterances used within counselling of religious women, could be that in general believers indicate obedience to an authority (e.g. God, the bible, doctrines and preacher) as more important than non-believers do (Becker and de Hart, 2006). So, from the perspective of a believer, a midwife could be seen as an authoritative person with whom it is important to build a relationship of trust. Furthermore, in general, non-believers are more individualised than believers and one of the characteristics of individualisation is the emphasis on interest of the person herself (Beck and Beck-Gernsheim, 2002; Becker and de Hart, 2006).

Study limitations

First, our study included only 20 midwives of the 2264 midwives in the Netherlands (Hingstman and Kenens, 2011;). Therefore, the generalisability of the findings of this explorative study is limited. Some of the midwives video-taped a relatively small amount of their consultations, which might not be representative for their way of counselling. Depending on the medical history of the client and the policy of the midwifery practice, additional counselling sessions could be held. These were not included in the study, because especially during the first consultation, focusing on pre-test counselling, the foundation for a relationship between the midwife and the client (and partner) is laid. However, participating midwives stated that they counselled for both the combined test and the fetal anomaly scan during the recorded counselling sessions and therefore it is likely that most of it was video-taped. Second, although the ratio multiparae versus nulliparae in the current study was the same as the Dutch pregnant population (The Netherlands Perinatal Registry, 2011) fewer multiparae participated. Furthermore, our study sample was more highly educated and more of Dutch origin than the Dutch pregnant population, although practices participating in this study were also located in the so called 'Randstad' area of the Netherlands, where significantly more people from non-Dutch origin live (The Netherlands Perinatal Registry, 2011). This also limits generalisability of our results. Last, using the RIAS prenatal for analyses as we did, all utterances get the same count irrespective of whether they refer to words or backchannels such as 'hm, hm' or to a whole expression, such as 'you have to know that the combined test is a risk assessment only'. In general, health education utterances are more likely to be whole expressions and not backchannels. During decision-making support backchannels will more often used reflecting active listening after asking exploring questions. These backchannels are counted as client–midwife relation utterances. As a result, the relative amount of health education utterances compared to decision-making support utterances may have been underestimated.

Key conclusions

- We found that midwives focused primarily on the *health education* function of counselling for antenatal congenital anomaly tests. As expected, during *health education* midwives did most of the talking while clients were listening.
- During *decision-making support* clients, especially multiparae, contributed more to the conversation compared to their contribution during *health education*. However, midwives contributed still more to the discussion compared to clients and used relatively few exploring questions.
- Parity appears to be independently associated with the way midwives counsel their clients. Nulliparous women receive more *health education* as well as *decision-making support* and contributed less to the conversation during *decision-making support* compared to multiparae.

Practice implications

Our findings should encourage midwives to reflect on the way they address the three antenatal counselling functions during counselling of nulliparous women compared to multiparae. Reflections should include the connection to knowledge of clients: 'what do you know about prenatal screening?' followed by: 'can you tell me what additional information you might need from me?' Regarding *decision-making support*, in our study a midwife stated 'The most important thing to do is to think about what you would do if your test informs you that your child has Down syndrome […] I think it is important to talk this through with your boyfriend'. Rather than telling a client what to do, we would encourage midwives to ask open questions such as 'what would you do in case prenatal tests informs you that your child has Down syndrome?' and wait for the answer, also when it takes the client some time to formulate it. Another approach to the starting of the counselling could also be considered; for example, providing clients with a decision aid to complete prior to starting the counselling session with the midwife. The counselling could start with: 'What do you want to know about the health of your child during pregnancy?' or 'Why would you opt for prenatal screening or why would you not opt for prenatal screening?' This directs the counselling more towards *DMS* compared to *HE*.

The Shared Decision Making model could be used as a practical guideline to optimise both the health education and decision-making support functions of antenatal counselling. The model divides the conversation into three parts: 'choice talk': the pros and cons of each choice (e.g. the choices about antenatal screening, the choices about antenatal diagnosis, the eventual choices about termination of pregnancy), 'option talk': exploration of preferences and moral values as well as providing further decision support by using decision tools and 'decision talk': reflection on the time needed to make the decision.

Conflict of interest

None declared.

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Appendix A. Dutch antenatal screening context

Since 2007 antenatal screening is offered to all Dutch pregnant women using an opting in approach (Health Council, 2007; van Agt et al., 2007; Oepkes and Wieringa, 2008). The screening programme includes two non-invasive tests: the combined test (CT), a blood test and an ultrasound to measure the nuchal translucency, for determining the possibility of Down (around 12th week gestational age), and the Fetal Anomaly Scan (FAS) for detecting physical anomalies (around 20th week gestational age). In the case of confirmatory diagnostic testing, two options are available: pregnancy termination before 24 weeks of gestation, or health-oriented antenatal care for the fetus combined with antenatal and postnatal support (NVOG, 2007). Although both tests are part of a population-screening programme, they are not offered on the same basis. The FAS is free for all women, whereas the CT has to be paid for (ca. 150 euro) by women younger than 36 years of age (Health Council, 2007; Oepkes and Wieringa, 2008).

The mean uptake of antenatal congenital anomaly screening tests in the Netherlands has been around 27% for the CT, but varies between different regions (range 12–52%) (Fracheboud et al., 2009; Bosch et al., 2010; Bakker et al., 2012; Schielen, 2012); the mean uptake of the FAS has been around 91% (range 80–99%) (Fracheboud et al., 2009; Schielen, 2012). In the Netherlands, an obstetrician, clinic genetic or paediatrician will provide counselling following confirmation of a fetal anomaly and discuss the option of pregnancy termination or health-oriented antenatal care for the fetus (www.prenatalescreening.nl). In 2011, 970 of the parents choose to terminate a pregnancy with a confirmed diagnosis of a congenital anomaly (e.g. about 0.5% of the pregnancies) (IGZ, 2013).

Appendix B. RIAS

The RIAS distinguishes utterances that are primarily informative (information giving), persuasive (counselling), interrogative (closed and open-ended questions), affective (social, positive, negative and emotional) and process oriented (facilitation, orientation and transitions). Information and question utterances were further specified in: (1) medical condition, symptoms and history; (2) testing and therapeutic intervention; (3) lifestyle, finances, self-care, and preventive behaviours; (4) psychosocial topics related to emotional reactions, coping, family issues, and social relationships; and (5) counselling or directs behaviour (Roter, 2006; Roter et al., 2006).

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